Contact Information

**Course Coordinator:** Yolanda Morbey, Department of Biology  
**Office location:** BGS 2074  
**Office hours:** By appointment  
**Email:** ymorbey@uwo.ca  
**Phone:** (519) 661-2111 ext. 80116

Course Information

**Eligibility:** Registration in the 4th year of a Major or Specialization module in Environmental Science or with special permission

**Anti-requisite:** Environmental Science 4999E

**Class lectures:** Tues. 6:30-8:30pm fall term; BGS Rm 0165 unless otherwise noted on class schedule (ONLY the Health and Safety training lecture attendance has required attendance unless safety training is obtained on your own)

**Course Description:**
The purpose of this course is to provide students registered in a Major or Specialization module in Environmental Science to undertake a one-term, interdisciplinary research project related to environmental science under the supervision of a faculty member associated with the Centre for Environment and Sustainability at Western. Students will gain experience in components of research, as well as written and oral scientific communication. Students projects may be research based, which may include original data collection and analysis, literature based, or based on the analysis of an existing data set. Several written components will be submitted including a project proposal and final project report for evaluation, as well as presenting the results of their project in an oral presentation. The guidelines for this course are outlined below. The Environmental Science Independent Study course has a weight of 0.5 full course equivalents (FCE).

**Admission Procedures:**
Students interested in completing an Environmental Science Independent Study course must contact the Course Coordinator or Undergraduate Chair in the academic year prior to commencing the project. A list of the available faculty and potential research thesis topics are normally available from the undergraduate program counsellor or Chair early in the winter term for theses to be undertaken and completed in the following academic year. It is the responsibility of the student to meet with potential supervisors they are interested in and discuss potential research topics. Once there is a mutual agreement between the student and faculty member a “Project Registration” form can be signed and
submitted to the course coordinator (form available on OWL or from course coordinator: see deadline on timeline).

Co-supervisors may be required if 1) the supervisor is not a regular or cross-appointed faculty member in the Faculty of Science, 2) the supervisor is not a Faculty Affiliate of the Centre for Environment and Sustainability, and 2) the supervisor has not previously supervised an ES 4999E or ES 4970F/G student. The co-supervisor must be a regular or cross-appointed faculty member in the Faculty of Science. The need for a co-supervisor will be at the discretion of the Course Coordinator. Co-supervisors are found with the help of the supervisor. Co-supervisors will be familiar with the course requirements and procedures, will attend all meetings, and will take on all supervisory responsibilities if necessary. They are not responsible for supervising the research, but will usually adopt an advisory role. Joint Supervisors take on equal responsibility as supervisors.

Advisory Committee (optional):
An advisory committee (up to 2 additional people) may also be formed; this is optional and up to your supervisor. An advisor may be a faculty member, postdoctoral fellow or senior graduate student from the same department as the supervisor or from a different department. If an advisory committee formed, the member’s information must be provided to the Course Coordinator. The committee members will need to sign your registration form. Typically, if you have an Advisory Committee you will ask these individuals to be your Readers.

Course Website:
See [http://uwo.ca/enviro/undergraduate/courses.html](http://uwo.ca/enviro/undergraduate/courses.html) for general course information and OWL (http://owl.uwo.ca) for detailed information. Students should check OWL on a regular basis for news and updates. This is the primary method by which information will be disseminated to all students in the class. The missing of critical information due to your failure to check OWL cannot be used as a basis for appeal.

### Course requirements

The Environmental Science Independent Study course 4970F/G consists of:
1. Developing and writing a viable project proposal (maximum 1800 words)
2. Conducting the proposed work
3. Writing a project report based on the work
4. Presenting a final seminar on the work and responding to questions
5. Attending lab meetings and advisory committee meetings (if applicable) when appropriate and/or requested by the Supervisor
6. Completion of all Health and Safety training requirements

### Project Proposals:

With the assistance of their Supervisors, Environmental Science 4970F/G students will prepare research proposals. Each proposal will be 1200-1800 words, and consist of the following
1. Abstract
2. Preliminary literature search
3. Statement of hypothesis (if hypothesis driven)
4. Proposed project
5. Description of the experimental design and/or planned methods and/or description of how data will be analyzed
6. References
Number 5 will vary depending on the type of study (research based, literature based, or analysis based). Students are required to submit a draft written research proposal to their Supervisor at the end of the 3rd week of the term you are registered in (see timeline for due date). In the event that the proposal is determined unsuitable, students will be given explicit directions for improving the proposal. Students are expected to make the necessary adjustments and resubmit to their proposals to their Supervisor for a second review. This must happen before the final draft is due. The final proposal must be submitted to the Course Coordinator for marking during the 5th week of the term you are registered in along with a signed “Project Proposal Approval” form. Late penalty is 1% per day.

Lab/Library Work:
Normally, research begins shortly after the approval of the proposal by the supervisor and is completed by the 3rd or 4th week of the third month of the term you are registered to allow adequate time for any analyses, report writing, and revisions. Students are expected to spend a minimum of 6-8 hours per week in the lab or field for the duration of the course. The quality of the lab/library/analysis work will be assessed by your supervisor.

Independent Study Project Report:
A project report presents the major findings of the project and the Reader draft is due the last day of lectures in the term you are registered. Reports should be 2500-3000 words (not including figures or tables) and consist of an abstract, introduction, body of text with appropriate subheadings, conclusion and references. Guidelines on how to write the report can be found on OWL. The report is evaluated by two “Readers” (see below for details). Within 1 week of receipt of the report students will receive a brief written report from each Reader, highlighting the strengths and weakness of the report and pointing out any changes that need to be made. Final draft copies of the report, including changes that may result after the evaluation by Supervisor and Readers must be submitted to the Supervisor and Course Coordinator (signed by the Supervisor) by the final day of the exam period in the term you are registered. A signed “Independent Study Research Report Approval” form must also be submitted to the course coordinator at this time. Late penalty is 5% per day.

Readers:
One Reader must be a Faculty member; the other can also be a Faculty member or a post-doctoral or senior graduate student from the same department as your supervisor, or a different department. The graduate student or post-doc must be from another lab than the one you are in. You will discuss the choice of your Readers with your supervisor. If you have an Advisory committee, they can be your Readers. The choice of Readers is subject to the approval of the Course Coordinator.

Public Presentation of the Project:
All Environmental Science 4970F/G students will present the major findings of their project, in seminar format, at prior to the final exam period of the term you are registered. Each seminar presentation will consist of a 12 minute presentation by the student, followed by 3 minutes of questioning. The presentation and defence of the project will be evaluated by 3 faculty members (your supervisor and your Readers).

Please use a Doodle poll or something similar to schedule your meetings as sending emails back and forth are more time consuming and cumbersome.

Student Roles and Responsibilities:
Environmental Science 4970F/G is not a traditional lecture style course. Students are expected to spend at least 6-8 hours per week in the lab for the duration of the project. Additional time spent out of lab for reading, writing, or data analysis will also be required.

It is the responsibility of the students to arrange for their Environmental Science 4970F/G projects, through consultation with the Course Coordinator.

In the Fall Term, two-hour weekly meetings will be held with the Course Coordinator. The intention of these formal meetings is to provide opportunities for development of skills that will assist with the project and in your professional life. There will few, if any, meetings in the winter term. With the exception of the Health and Safety training class, the classes are not required for 4970F/G students but are highly recommended.

Students are responsible for completing all necessary forms (Project Registration, Project Proposal Approval, and Independent Study Project Report Approval) and submitting them, on time, to the Course Coordinator. Students are ultimately responsible for their own work, including the meeting of deadlines as established by the Course Coordinator.

**Supervisor Roles and Responsibilities:**
Potential supervisors will submit project outlines to Course Coordinator for posting in the winter term. Typically projects will be of sufficient nature for completion within one semester.
Supervisors of student projects are expected to:
1. Arrange for the appropriate infrastructure and and provide direction/guidance for the proposed work.
2. Ensure that projects provide sufficient challenge to students, and comply with expectations established within the Faculty of Science.
3. Evaluate the performance of students for whom they are supervisor.
4. Be available to meet with students on a regular basis.
5. Integrate students into the existing laboratory, ensuring they are treated respectfully.
6. Ensure students receive the necessary health and safety training as well as any other relevant training (e.g. animal care) prior to the start of the project.
7. Ensure that members of the Advisory Committee are aware of course procedures and timetables.

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<thead>
<tr>
<th>Assessment</th>
<th>Value/Weight</th>
<th>Evaluator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proposal</td>
<td>20%</td>
<td>Course Coordinator</td>
</tr>
<tr>
<td>Lab/library Work</td>
<td>30%</td>
<td>Supervisor</td>
</tr>
<tr>
<td>Written Thesis</td>
<td>25%</td>
<td>Readers</td>
</tr>
<tr>
<td>Public Presentation and Questions</td>
<td>25%</td>
<td>Minimum 3 evaluators, including supervisor</td>
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**NOTE:** In order to pass the course, it is mandatory that you complete the project report.

**Course Policies and Other Information**

**Use of OWL:**
- Course announcements, links and resources will be posted on OWL.
• Regularly (at least once/week) log on to the course website for class announcements or postings.

Classroom Environment Rules of Conduct:
1. All technology not being used for class purposes should be turned off, disabled or not used (i.e. phones, tablets, computers). Answering emails, surfing the web and chatting online are not acceptable uses of technology in the classroom. Remember, other people around you can see what you are doing on your laptop. This can be a distraction to your classmates.
2. Class starts on time. If you come in late, please do so quietly. You are responsible for the material presented and obtaining handouts if you arrive late or miss a class.
3. Please treat all class members and the professor with respect in class. This includes keeping noise levels down during class.

Email Policy
1. Use your Western email account ONLY when contacting your professor. Personal accounts might be intercepted by “SPAM” filters and be sent to junk mail.
2. It is important that you include “ENVSCI4999E” in the subject of any emails that you send, at least for the first few emails. This will help sort through the many emails received daily and respond as quickly as possible.
3. Generally, all emails will be responded to within 48 hours during weekdays (not including holidays). Emails will *usually* be addressed during regular work hours (9-5). I may choose, at my discretion, to respond outside these hours, depending on availability.

Accessibility
Please discuss with your supervisor and/or Course Coordinator if you require workshop material in an alternate format or if any other arrangements can make this course more accessible to you. You may also wish to contact Services for Students with Disabilities (SSD) at 661-2111 ext. 82147 if you have questions regarding accommodation.

Accommodation for Medical Illness or Other Serious Circumstances
If you are unable to meet ANY course requirement due to illness or other serious circumstance, you must provide valid medical documentation or other supporting documentation to the Dean's office as soon as possible and contact the instructor immediately. It is your responsibility to make alternative arrangements with the instructor once the accommodation has been approved by the Dean’s office and the instructor has been informed. Please see for further information: http://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_medical.pdf

Student’s requiring academic accommodation due to illness for any assignment/exam should use the Student Medical Certificate when visiting an off-campus medical facility or request a Record's Release Form (located in the Dean's Office) if you visit Student Health Services. The Student Medical Certification form can be downloaded from this site: https://studentservices.uwo.ca/secure/index.cfm

This site also has the Policy on Accommodation for Medical Illness.

Plagiarism Rules and Scholastic Offenses
“Plagiarism: Students must write their essays and assignments in their own words. Whenever students
take an idea, or a passage from another author, they must acknowledge their debt both by using quotation marks where appropriate and by proper referencing such as footnotes or citations. Plagiarism is a major academic offence (see Scholastic Offence Policy in the Western Academic Calendar).”

This concept applies with equal force to all assignments, including laboratory reports, diagrams, and computer projects. Students wishing more detailed information should consult their instructor, Department Chair or their Dean's office. In addition, they may seek guidance from a variety of current style manuals available in the University's libraries.

“Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at the following Web site: http://www.uwo.ca/univsec/handbook/appeals/scholastic_discipline_undergrad.pdf.”

The following guide will help you avoid committing an academic offence
http://www.uwo.ca/ombuds/student/cheating.html

### Available Support Services

The **Writing Support Centre** can help students to improve their writing skills. Writing resources and/or expert writing counsellors are available to you. [http://www.sdc.uwo.ca/writing](http://www.sdc.uwo.ca/writing)

The **Student Development Centre** has many other support services available to students.
[http://www.sdc.uwo.ca/](http://www.sdc.uwo.ca/)

The website for Registrarial Services is:

[http://www.registrar.uwo.ca.](http://www.registrar.uwo.ca.)

### Due Dates for 4970F

<table>
<thead>
<tr>
<th>Date</th>
<th>Items Due for 4970F</th>
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<tbody>
<tr>
<td>Sept. 8-12, 2014</td>
<td>Project registration form DUE to Course Coordinator if not submitted in March; inform Course Coordinator of Advisory Committee members</td>
</tr>
<tr>
<td>Sept. 26, 2014</td>
<td>Proposal DUE to Supervisor</td>
</tr>
<tr>
<td>Oct. 8, 2014</td>
<td>Proposal DUE to Course Coordinator – include Project Proposal Approval form</td>
</tr>
<tr>
<td>No later than Dec. 5, 2014</td>
<td>PRESENTATION DAY – exact date TBA</td>
</tr>
<tr>
<td>Dec. 12, 2014</td>
<td>Project Report comments received from Readers</td>
</tr>
<tr>
<td>Dec. 18, 2014</td>
<td>Report Final Draft DUE - include signed Independent Study Project Report Approval form</td>
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### Due Dates for 4970G


<table>
<thead>
<tr>
<th>Date</th>
<th>Items Due for 4970G</th>
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<tbody>
<tr>
<td>Jan. 5-9, 2015</td>
<td>Project registration form DUE to Course Coordinator if not submitted in March; inform Course Coordinator of Advisory Committee members</td>
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<tr>
<td>Jan. 23, 2015</td>
<td>Proposal DUE to Supervisor</td>
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<tr>
<td>Feb. 4, 2015</td>
<td>Proposal DUE to Course Coordinator – include Project Proposal Approval form</td>
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<tr>
<td>No later than Apr.</td>
<td>PRESENTATION DAY – exact date TBA</td>
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<tr>
<td>10, 2015</td>
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<tr>
<td>Apr. 8, 2015</td>
<td>Project Report Reader Draft DUE</td>
</tr>
<tr>
<td>Apr. 17, 2015</td>
<td>Project Report comments received from Readers</td>
</tr>
<tr>
<td>Apr. 30, 2015</td>
<td>Report Final Draft DUE - include signed Independent Study Project Report Approval form</td>
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